

## Abstract of the Disclosure

A method to detect a fault in a CPU of an industrial controller during on-line safety control of real world objects. An application program is complied into assembler instructions. A test application is complied into assembler instructions where the assembler instructions is a subset of the total number of assembler instructions available for the CPU. The application program is downloaded and the test application to a central unit of an industrial controller. The test application is repeatedly executed in the industrial controller. A result from the test application is repeatedly compared with the pre-defined result in the test module. A fault detected in the CPU as the result from the test application does not equal the pre-defined result stored in the test module and the unexpected result of the test application is due to the execution of an assembler instruction of the test application. The execution of the application program is aborted wherein the application program is prohibited from executing the assembler instruction which otherwise would cause the application program to fail.